APPENDIX 1
DEFINITIONS and ACRONYMS

DEFINITIONS

1% lethality dosage - Maximum dosage at which an individual has a 1% chance of dying.

Abnormal Event – An event level for US DOE-RL, indicated events are in progress or have occurred at a facility and indicates a potential degradation of the level of safety at the facility. This event is not an emergency classification level.

Access Control Points - Road intersections or other logistically viable points on the relocation and food control boundaries which enable law enforcement and other emergency workers to maintain access control of the respective area(s). It involves the deployment of vehicles, barricades, or other measures to deny access to a particular area.

Accident Assessment - The evaluation of the nature, severity, and impact of an accident. In the Chemical Stockpile Disposal Program, the Army will be primarily responsible for accident assessment.

Acute Exposure Guideline Levels (AEGLs) – AEGLs represent threshold exposure limits for the general public and are applicable to emergency exposure periods ranging from 10 minutes to 8 hours. AEGLs are distinguished by varying degrees of severity of toxic effects. It is believed that the recommended exposure levels are applicable to the general population including infants and children, and other individuals who may be sensitive and susceptible.

AEGL-1 is the airborne concentration (expressed in parts per million (ppm) or milligram/meter cubed) of a substance above which (i.e., between AEGL-1 and AEGL-2) it is predicted that the general population, including susceptible individuals, could experience notable discomfort, irritation, or certain asymptomatic, non-sensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.

AEGL-2 is the airborne concentration of a substance above which (e.i., between AEGL-2 and AEGL-3) it is predicted that the general population, including susceptible individuals, could experience irreversible or other serious, long-lasting adverse health effects, or an impaired ability to escape.

AEGL-3 is the airborne concentration of a substance above which it is predicted that the general population, including susceptible individuals, could experience life-threatening health effects or death.

Advisories - Precautionary advice which is easily implemented at a low cost.

Advisories can be issued during the early or intermediate phases in a geopolitically bound area large enough to encompass the entire area where contamination is expected. For example, a typical advisory would be the recommendation to place livestock on covered water and stored feed until further notice.

Aerosol - Airborne solid or liquid substances classified as dust, smoke, fumes, mists, and fog according to their physical nature, particle size, and method of generation. Particle size may vary from 0.01 to 100 micrometers in diameter.

Airborne Exposure Limits (AEL): Allowable concentrations in the air for occupational, general population exposures and source emission limit. Unless otherwise noted, AEL refers to the 8-hour worker population limit AEL-time weighted average (TWA) for unmasked agent workers.

All Call System: The dedicated telephone line used for making notification of a chemical event. It connects Benton County Dispatch, Hemriston Safety Center, Umatilla County Dispatch, Morrow County Dispatch, Prosser Dispatch, Oregon State Police Dispatch, the Confederated Tribes of the Umatilla Indian Reservation, Oregon emergency Response System, Washington State Emergency Management, and FEMA Region X.

Area of Planning Attention – To assist State and local authorities in assessing the need for any preplanning in the vicinity of naval bases or shipyards where nuclear-powered vessels are berthed, the Naval Nuclear Propulsion Program has designated Areas of Planning Attention. The Areas of Planning Attention extend 0.5 mile around every location where nuclear-powered vessels are normally berthed (i.e., from the actual dock or pier where the ship is berthed–not from the shipyard or naval base property boundary). The 0.5-mile distance is based on detailed, conservative analysis of worst-case, but credible scenarios—the actual radius of impacted downwind area will most likely be smaller.

Assistance Centers - Facilities located outside the plume exposure pathway emergency planning zone wherein evacuees can receive first aid and assistance in obtaining food and lodging. Limited housing of evacuees is provided at assistance centers or at separate lodging facilities. (See also, Emergency Worker/Assistance Centers.)

Atmospheric Stability (low level) - This is a relative classification of the mixing of the air near the surface. This mixing has been measured as a standard deviation of wind direction changes or, in a more direct way, as the difference in air temperature at two reference heights (temperature gradient between 2 and 4 meters). Low stability is associated with smaller downwind hazard distances.

Atmospheric Stability Categories - Note: Categories A, B, and C are most common during the day. Categories D, E, and F are most common during the night. Category G is at night but is very rare.

Category A: Extremely Unstable - Weather conditions are very unpredictable. Wind speed average one meter/second but is "gusty." The temperature rapidly decreases with altitude. This condition is called "superadiabatic." It is common on a hot, sunny day. Due to these conditions, a contamination plume would "loop" and be unpredictable.

Category B: Moderately Unstable - Weather conditions are still unpredictable, but less than "A." Wind speeds average two meters/second, and is not as "gusty." The temperature still decreases, but not as rapidly with altitude. "Looping" of a plume would still occur, but would not be as severe. This condition is common on a sunny, warm day.

Category C: Slightly Unstable - Weather conditions are somewhat unpredictable. Wind speeds average five meters/second. A little gustiness may be expected. The temperature still decreases and looping of a contamination plume may occur, but progressively less pronounced than "A" or "B" categories. This is an average day, slightly cloudy.

Category D: Neutral - Weather conditions are more predictable. Wind speeds average five meters/second, with no expected gustiness. The temperature still decreases with altitude, but the change is less pronounced. At this point, the condition name changes from "superadiabatic" to "adiabatic." A contamination plume is more predictable, with minor "looping." This condition is common on an overcast day or night (heavy overcast).

Category E: Slightly Stable - Weather conditions turn more predictable than with "D." Wind speeds average three meters/second. The temperature does not change with altitude. This condition is called "isothermic." A contamination plume is easy to predict with this condition. "Coning" of the plume occurs. This condition generally occurs at night, and is considered an average night (partly cloudy).

Category F: Moderately Stable - Weather conditions become very predictable. Wind speeds average two meters/second. This is an inversion. Temperatures increase with altitude (opposite of an "A" class). With this condition, little vertical dispersion occurs, i.e., it does not reach the ground rapidly.

Category G: Extremely Stable - This condition is very predictable, but rarely occurs. No wind blow, and the temperature increases rapidly with altitude. This condition may occur over a city, which acts even less pronounced than an "F" condition.

Authorized Army Official: A Umatilla Depot Official authorized to declare a chemical event emergency notification level and make protective action recommendations.

Boiling Water Reactor (BWR) - A nuclear reactor in which water, used as both coolant and moderator, is allowed to boil in the core. The resulting steam is used to drive a

turbine for generating electricity. Energy Northwest, Columbia Generating Station is a boiling water reactor.

Buffer Zone - The area which falls between a measured or calculated isodose line and the surrounding geopolitical boundary that defines a relocation area or food control area.

Calculated Dose Line - An isodose line that is generated using dose assessment techniques and calculations. This line is not measured in the field directly.

Blister Agent - See HD.

Chemical Accident/Incident (CAI) - Chemical events involving chemical surety materials. A chemical accident refers to a chemical event resulting from non-deliberate acts where safety is of prime concern. A chemical incident refers to a chemical event resulting from deliberate acts (terrorism or criminal), where security is of concern.

Chemical Accident/Incident Response and Assistance (CAIRA) Plan - A plan that spells out how an Army installation will handle chemical material events. This on-post plan must be integrated with off-post plans.

Chemical Accident/Incident Response and Assistance (CAIRA) Operations - A Headquarters, Department of Army publication that standardizes federal response operations in case of a chemical surety event.

Chemical Agent (lethal) - A chemical substance that is intended for use in military operations to kill, seriously injure, or incapacitate a person through its physiological effects. Excluded from consideration are riot control agents, chemical herbicides, smoke, and flame.

Chemical Event Emergency Notification System - A tiered system whereby the Army classifies chemical surety emergencies and provides appropriate notification to off-post public officials.

Chemical Limited Area – The area immediately surround one or more exclusion areas.

Chemical Stockpile Disposal Program (CSDP) - The congressionally-mandated program that requires the Army to dispose of all its unitary chemical agents by September 30, 1997. The preferred mode of disposition is on-post incineration.

Chemical Surety - Those controls, procedures, and actions that contribute to the safety, security, and reliability of chemical agents and their associated weapons systems throughout their life cycle without degrading operational performance. The term is also used to refer to an Army regulation, Nuclear and Chemical Weapons and Material: Chemical Surety, AR/50/6, that implements the chemical surety program.

Chemical Surety Event - A term used by the military that includes (1) chemical

accidents resulting from nondeliberate events where safety is of primary concern or (2) chemical incidents resulting from deliberate acts or criminal acts where security is a concern.

Chemical Surety Material - Chemical agents and their associated weapons systems or storage and shipping containers that are either adopted or being considered for military use.

Columbia Generating Station - The nuclear power-generating facility operated by the Energy Northwest , on the Hanford site area.

Community Emergency - Events are likely to occur or have occurred that involve the agent release with chemical effects beyond the installation boundary. This level will be declared when the predicted chemical agent no-effect dosage extends beyond the installation boundary.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) - A law that deals with hazardous substance releases into the environment and the clean up of hazardous waste sites.

Congregate Care Center - A public or private facility that is predesignated and managed by the American Red Cross during an emergency, where evacuated or displaced persons are housed and fed.

Corrective Actions - Those emergency measures taken to lessen or terminate an emergency situation in order to prevent an uncontrolled release of radioactive material or to reduce the magnitude of a release (e.g., shutting down equipment, firefighting, repair, and damage control).

D2PC – A dispersion model developed by the Army to estimate downwind hazard distances from releases of chemical agents.

Demilitarization - The mutilation, destruction, or neutralization of chemical surety material, rendering it harmless and ineffectual for military purposes.

Derived Intervention Levels (DILs) - A calculated concentration of a specific radionuclide in food, at which it is necessary to take protective actions. DILs can also be referred to as Derived Response Levels (DRLs).

Dose - A generic term denoting a quantity of energy absorbed from exposure to ionizing radiation. (The term when expressed in Roentgens relates to the amount of gamma or x-ray radiation required to produce a quantity of ionizations in a volume of air. Expressed in rads it relates to an amount of absorbed dose to any material. Expressed in rem it is a dose equivalent, which relates absorbed dose to the biological effect in human tissue. Exposure to a rad of alpha will cause more damage to tissue than a rad of gamma radiation. Exposure to a rem of gamma will cause the same amount of damage to tissue.)

Dose Assessment Center (DAC) - An area within or near the facility which houses the personnel responsible for coordinating radiological monitoring teams, collecting radiological monitoring data, calculating dose projections, and recommending protective actions for the Emergency Planning Zones. At the Energy Northwest, Columbia Generating Station, this area is referred to as Meteorological Unified Dose Assessment Center. For Naval Nuclear Propulsion Program installations, dose assessment will be conducted at the Emergency Control Center (ECC).

Dose Commitment - The total dose equivalent which may be expected to accrue to an organ of interest, such as the thyroid, as a result of inhalation, ingestion, or immersion of a source of radiation during an event. The dose commitment includes the effect of retaining radioactive material in the body after an event.

Dosimeter - A device to detect and measure accumulated radiation dose of an individual. Devices used include film badges, thermoluminescent dosimeters, and direct reading pocket dosimeters.

Drill - A supervised instruction session devised to test, maintain, and develop skills in a specified area. A drill can be an element of an exercise.

Early Phase - The time period at the very beginning of a nuclear incident where immediate decisions for effective use of protective actions are required. Early protective actions may be based on plant conditions and/or projections of radiological conditions in the environment. This phase may last from hours to days. For planning purposes, it is assumed to last four days.

Emergency - An abnormal condition at a facility that presents the possibility of an impact on public health and safety. Such conditions are categorized into different classification levels. These classification levels are discussed fully in Annex A and its Appendices.

Emergency Action Levels (EALs) - Specific abnormal indications used by the nuclear power plant to designate the emergency classification and severity of the event. Such indications include power plant instrument indicators, specific levels or radioactive releases from the power plant, and radiological dose rates.

Emergency Operations Centers (EOC) - State and county centers where emergency direction and response are coordinated. The state EOC is the single point of contact for the authorization of state resources or actions, including emergency permits. Includes representation from all appropriate state agencies.

Emergency Operations Facility (EOF) - A building near the nuclear facility where the management of site emergency response, coordination of radiological assessments, and management of recovery operations occur for the facility operator. For Naval Nuclear Propulsion Program installations, such a center is called an Emergency Control Center (ECC).

Emergency Planning Zones (EPZs) - A geographical area delineated around a potential hazard source to define the potential area of impact. EPZs facilitate planning for the protection of people during an emergency.

Emergency Protective Actions - Life-saving measures taken to prevent immediate or long-term public health and safety impacts due to exposure to radiation.

Emergency Response Procedure (ERP) - A detailed description of essential actions for responding to an accident at a nuclear power plant.

Emergency Workers - Any person, including, but not limited to, an architect registered under chapter 18.08 RCW or a professional engineer registered under Chapter 18.43 RCW, who is registered with a local emergency management organization or the department holds an identification card issued by the local emergency management director or the department for the purpose of engaging in authorized emergency management activities or is an employee of the state of Washington or any political subdivision thereof who is called upon to perform emergency management activities.

Emergency Worker/Assistance Center (EWAC) - A combined Emergency Worker Center and Assistance Center.

Emergency Worker Center - A facility where emergency workers will assemble for assignments, equipment, and necessary training. The facility is also equipped to monitor and decontaminate personnel as required. (See EWAC.)

Energy Northwest - A public corporation planning the construction and operation of one nuclear facility in the state of Washington. The facility Columbia Generating Station is located on land leased from the United States Department of Energy, Hanford Site.

Enhanced Sheltering - Taking refuge in structures in which infiltration has been reduced via weatherization techniques before the occurrence of accidents**.**

Exclusion Area - Fixed Nuclear Facility - The area surrounding a nuclear reactor in which the facility operator has the authority to determine all activities, including exclusion or removal of personnel and property from the area. CSEPP: The area immediately surrounding one or more receptacles in which chemical agents are contained. In the absence of positive preventive measures, access into the area constitutes access to the chemical agent. At Naval Nuclear Propulsion Program facilities a combination of the outer base boundary and the Controlled Industrial Area (CIA) form the Exclusion Area.

Expedient Sheltering - Taking refuge in existing structures that are modified at the time of an accident to reduce infiltration by using common resources and materials, such as plastic bags, tape, and wet towels.

Exercise – A method used and designed to test and revaluate the agency &/or facility's

ability to properly respond to a multitude of disaster events or emergency scenarios.

Exposure - The absorption of radiation (external exposure) or ingestion of radioactivity (internal exposure). Acute exposure is generally accepted to be a large exposure received over a short period of time. Chronic exposure is exposure received during a lifetime. (See Dose.)

Federal Emergency Management Agency (FEMA)/Department of Homeland Security (DHS) - An agency created in 1979 to provide a single point of accountability for all federal activities related to disaster mitigation and emergency preparedness, response, and recovery. FEMA manages the President's Disaster Relief Fund and coordinates the disaster assistance activities of all federal agencies in the event of a Presidential Disaster Declaration.

Federal Radiological Emergency Response Plan (FRERP) - The plan which describes the Federal response to the radiological and onsite technical aspects of an emergency in the United States and identifies the lead federal agency for an event. The events include one involving the Nuclear Regulatory Commission or state licensee, the Department of Energy or Department of Defense property, a space launch, occurrence outside the United States, but not affecting the United States, and one involving radium or accelerated-produced material. Transportation events are included in those involving the Nuclear Regulatory Commission, state licensee, Department of Energy, or Department of Defense.

Federal Response Plan (FRP) - The plan, which establishes the basis for the provision of federal assistance to a state and the local jurisdiction, impacted by a catastrophic or significant emergency or disaster which results in a requirement for federal response assistance.

First Federal Official (FFO) - The first federal representative of a participating agency of the National Response Team arriving at the incident scene. The FFO coordinates activations under the National Contingency Plan.

Fixed Nuclear Facility (FNF) - One of a variety of complexes, in which fissionable fuel is stored or utilized for such functions as electrical power generation, or testing and manufacturing fuels and materials.

Food Access Control Point (FACP) - An access control point established along the food control boundary to ensure that food control measures are maintained (synonymous with Food Control Point).

Food Control Area (FCA) - An area in which food control measures are implemented. Measures are enacted due to potential or actual adulteration of food products. The food control area would include the relocation area, if a relocation decision is appropriate.

Food Control Boundary - A geopolitical designation that defines and surrounds the food control area, where food control measures may be implemented.

Food Control Measures - Protective actions established to limit the exposure of the general public to adulterated food. Measures may include delaying or restricting harvest and/or transport, and instituting an embargo.

GB (Sarin)-

Description

This chemical agent has the consistency and appearance of water It is colorless and odorless in its pure form. It has evaporation characteristics similar to water but is heavier than air as a suspended vapor. It is completely soluble in water.

Effects

- Low dose effects include a redness and pressure in and behind eyes, sweating, and salivation.
- Higher dosages produce nasal congestion, tightness in the chest, salivation, nausea, vomiting, diarrhea, stomach cramps, involuntary urination /defecation, generalized muscle twitching and muscle cramps, depression, anxiety, and confusion.

- Exposure to high concentrations of nerve agent may bring on a lack of coordination, mental confusion and collapse so rapidly that the casualty cannot perform self-aid.

- Lethal dose: Concentrations of GB at 70 milligrams of agent per cubic meter of air can produce a lethal dose in a population of healthy males ages 18 to 25 years.

Geopolitical Boundary - A continuous line on a map which may utilize geographic (rivers, roads, and railroad tracks) or political (county/state border) designations. The food control and relocation boundaries are geopolitical boundaries.

HD -

Description

This chemical agent has the consistency and appearance of heavy oil. It is colorless and odorless in its pure form, but is normally pale yellow to black. It has evaporation characteristics similar to oil with a very low evaporation rate. It is not soluble in water but will form concentrations in the form of balls that will not float. This agent will freeze at 55 degrees Fahrenheit.

Effects

- Low dose effects include affects to both the eyes and skin. Swelling and

reddening of the skin occurs after a period of 4 to 24 hours depending on the degree of exposure. Exposure of the eyes to HD vapor produces inflammation. Inhalation of vapor or aerosol can produce inflammation of the upper respiratory tract accompanied by sneezing, coughing, and bronchitis.

- Higher dosages produce a much stronger effect on the eyes than on the skin. Severe damage to eye tissue and blindness can result. Severe blistering of the skin, particularly moist or sensitive areas will occur. The skin's healing process is very slow following exposure.

- Lethal dose: A teaspoon of liquid on the body is considered a lethal dose.

Host County - A county in proximity to the plume exposure zone that can provide evacuee support.

Igloo - An earth covered shelter shaped like a Quonset hut, used to store munitions.

Immediate Response Zone (IRZ) – The closest geographical area around a hazard site that defines the area most rapidly and severely affected by a hazard such that immediate protective actions are needed to protect the public.

Ingestion Exposure Pathway Emergency Planning Zone - Ingestion exposure pathway is the potential pathway of radioactive materials to the public through consumption of radiologically contaminated water, food crops or dairy products. For planning purposes this planning zone extends 50 miles in radius from the nuclear power plant.

Initial Response Force (IRF) - An emergency action organization tasked to provide first response to a chemical event at an installation assigned a chemical surety mission. Under command of the installation commander, the IRF is comprised of command and control elements and emergency teams capable of providing emergency medical services and initiating those actions necessary to prevent, minimize, or mitigate hazards to public health and safety or to the environment.

In-Place Sheltering - Also known as in place protection, involves taking refuge in various kinds of structures. Five types of sheltering have been identified to be of interest for protection from chemical agents: Normal, Expedient, Enhanced, Specialized, and Pressurized.

Intergovernmental Consultation and Coordination Boards (ICCBs) - The national and local boards composed of federal, state, and local members that provide for information transfer in the Chemical Stockpile Disposal Program.

Intermediate Phase - This period of time starts when the release has terminated. This may occur in the form of stabilizing a reactor, or ensuring that no subsequent releases are expected. Reliable environmental measurements are made before and during the

intermediate phase as a basis for decisions on intermediate phase protective actions (subsequent to early phase protective actions). The intermediate phase extends until these additional protective actions are terminated. The intermediate phase may overlap the early and late phases and may last from days to many months. For planning purposes, it is assumed to last for one year.

Ionizing Radiation - Any radiation displacing electrons from atoms or molecules, thereby producing ions. Examples: alpha, beta, gamma radiation, X-ray or short-wave ultraviolet light. Ionizing radiation may produce severe skin or tissue damage.

Isodose Line - A geographic designation that defines locations where the radiation doses (or dose rates) are constant. There are typically many isodose lines on a map when characterizing radioactive contamination. This is similar in form to a topographic map designation, which shows increments of elevation.
Isopleth - A measured or projected contour line on a map connecting locations with equal dose rates or equal levels of contamination. Isopleths in the procedures refer to levels of radiation or radioactive contamination. An iso-dose line.

Joint Information Center (JIC) - A facility used by the affected utility, state(s) and county (ies) to jointly coordinate the public information function during a nuclear facility emergency.

Joint Information System (JIS) - Multiple locations where public information officials conference via telephone to collaborate on and coordinate the release of emergency public information when establishing a JIC is not practical.

Joint Steering Committee - The body of federal officials created by the Army and FEMA Memorandum of Understanding to serve as a focal point for project oversight of the Chemical Stockpile Disposal Program emergency planning efforts.

Late Phase - This time period of a fixed nuclear facility accident begins when recovery and restoration actions are recommended. This period of time extends until all recovery actions have been completed, which may be on the order of months to years. The late phase may also be referred to as the recovery and restoration phase.

Leaker: Munition or over pack container from which chemical agent escapes. A leaking munition has a confirmed detection of chemical agent outside the munition body or bulk storage container.

Local Emergency Planning Committee (LEPC) - The planning body designated by the Superfund Amendments and Reauthorization Act, Title III legislation as the planning body for preparing local hazardous materials plans.

Lewisite - A brown or colorless liquid that is part of the chemical stockpile vesicants (blister agents).

Limited Area - The area immediately surrounding one or more exclusion areas.

Normally, the area between the boundaries of the exclusion areas and the perimeter boundary of an Army chemical storage facility.

Material Safety Data Sheet (MSDS) - Compilation of information on a specific chemical compound including chemical name, manufacturer, physical data, and health hazard. (See Tab 1 for MSDS for the chemical agents VX, GB, and HD).

Maximum Credible Event (MCE) - The worst single event likely to cause the release of a chemical agent from a munition, bulk container, or process, as a result of an unintended, unplanned, or accidental event. The probability of maximum credible events is 10^{-6} - 10^{-8} (1 in 1,000,000 to 1 in 100,000,000 years).

Meteorological Unified Dose Assessment Center (MUDAC) - An area within the Columbia Generating Station, Emergency Operations Facility which houses the personnel responsible for the coordination of radiological monitoring teams, collection of radiological monitoring data, calculation of dose projections, and the recommendation of protective actions for the Emergency Planning Zones. Also see dose assessment center.

Mustard Agent - The vesicant agents (H, HD, and HT) that cause blistering. In sufficient amounts, can be fatal if not quickly removed from exposed skin or if inhaled.

National Contingency Plan (NCP) - "The National Oil and Hazardous Substances Pollution Contingency Plan" (40 CFR Part 300) prepared by the Environmental Protection Agency to put into effect the response powers and responsibilities created by the Comprehensive Environmental Response, Compensation and Liability Act, and the authorities established by Section 311 of the Clean Water Act.

National Defense Area (NDA) - An area established on non-federal lands located within the United States, its possessions, or territories for the purpose of safeguarding classified defense information or protecting Department of Defense equipment and/or material. A national defense area may be established around the site of an accident involving military weapons or equipment by the Department of Defense to protect national security.

National Response Center - A communications center for activities related to hazardous materials response actions at Coast Guard Headquarters in Washington D.C. The Center receives and relays notices of discharges or releases to the appropriate On-Scene Coordinator, disseminates On-Scene Coordinator and Regional Response Team reports to the National Response Team when appropriate, and provides facilities for the National Response Team to use in coordinating national response action when required.

National Response Team - The group consisting of representatives of 14 government agencies. The National Response Team agencies include the Department of Defense, Department of Interior, Department of Transportation/Research and Special Programs Administration, Department of Transportation/U.S. Coast Guard, Environmental

Protection Agency, Department of Commerce, Federal Emergency Management Agency, Department of State, Department of Agriculture, Department of Justice, Department of Health and Human Services, Department of Labor, Nuclear Regulatory Commission, and Department of Energy.

Naval Nuclear Propulsion Program (NNPP): The NAVAL NUCLEAR PROPULSION PROGRAM is a joint program of the U.S. Department of Energy/National Nuclear Security Administration and U.S. Navy. All naval nuclear propulsion work and operations at nuclear capable public and private shipyards, naval nuclear ships/tenders, submarine bases and nuclear homeport naval stations are under the radiological regulatory authority of the Naval Nuclear Propulsion Program.

Naval Station Everett: A 120-acre naval station in Everett, Washington on Port Gardner Harbor. One nuclear vessel, an aircraft carrier, is homeport at Naval Station Everett. PSNS is responsible for emergency preparedness and response.

Nerve Agent - The nerve agents (GA, GB, and VX) are fatal, colorless, odorless, and tasteless chemical agents that can be fatal upon skin contact or when inhaled. These agents attack the central nervous system by inhibiting the production of acetylcholinesterase, which is essential for the proper operation of the nervous system.

No Deaths Dosage -- The largest dosage which would result in no fatalities to healthy adults.
No Effects Dosage -- A calculated dosage from a chemical agent release below which a toxicity level is not expected to have short-term adverse effects on humans.

No Effects Distance - A calculated distance downwind from a chemical agent release beyond which the toxicity level is not expected to have short-term adverse effects on humans, based on laboratory animal studies.

Non-Surety Event: An accident or incident that does not involve chemical surety material or actions that contribute to safety or security.

No Significant Effects Dosage: Represents a level of exposure that should produce no permanent effects in the affected population.

Nuclear Regulatory Commission (NRC) - The federal agency that regulates and licenses commercial nuclear facilities.

On-Scene Coordinator (OSC) - The federal official predesignated by the Environmental Protection Agency or the Coast Guard to coordinate and direct federal responses and removals under the National Contingency Plan, or the Department of Defense official designated to coordinate and direct the removal actions from releases of hazardous substances, pollutants or contaminants from the Department of Defense vessels and facilities. For Department of the Army facilities, the Initial Response Force and the Service Response Force Commander is the On-Scene Coordinator.

Other – Events are likely to occur or have occurred that may be perceived as an emergency or that may be of general public interest, but which pose no actual chemical surety hazard.

Plume Exposure Pathway Emergency Planning Zone - The planning area extending 10 miles from the facility in which actions are taken to protect the public from direct exposure of radioactive materials in the air or internal exposure from inhalation.

Potassium Iodide (KI) – The chemical compound used by people who could be exposed to radioactive iodine in the atmosphere to saturate the thyroid with stable iodine in order to block and radioactive iodine up take by the thyroid.

Precautionary Zone (PZ) – The outer most geographical area around a hazard source extending from the Protective Action Zone to the point where no adverse human impact is expected, and for which no protective actions are anticipated.

Preventive Measures - Preventive protective actions that are taken to avoid or minimize the contamination of food, milk, or water.

Preventive Protective Actions - Actions implemented to avoid or reduce the contamination of food, milk, or water. These measures may involve more complex actions and some economic consequences. Preventive protective actions will be implemented in areas bounded by advisories that are projected or known to contain locations of contamination. A typical preventive protective action is the recommendation to stop picking up milk from licensed dairies.

Projected Dose Equivalent - an estimate of the radiation dose equivalent that affected population groups could potentially receive if protective actions are not taken.

Protective Action - An action or policy that is designed to protect human health and safety. Protective actions are often described based on a certain Protective Action Guide and circumstances.

Protective Action Decision (PAD) - An action or measure taken by public officials to prevent or minimize radiological exposures to people.

Protective Action Guides (PAGs) - Radiation exposure "trigger levels" which prompt the implementation of a specific protective action based on a given dose level or radioactivity level.

Protective Action Recommendation (PAR) - A recommendation based on technical scientific data for public officials to use in framing a decision to prevent or minimize the contamination of people and foodstuffs.

Protective Action Guide Ratio - The ratio of the measured sample isotopic concentration to the corresponding derived intervention level. A PAG value of 1.0 or greater indicates that protective actions should be taken to prevent or reduce radiation

exposure to the public.

Protective Action Zone – A geographical area around a hazard site broader then the Immediate Response Zone in which agent exposure is unlikely. However protective actions therein can significantly enhance the ability to protect the public.

Public Information - Additional or supplemental facts or knowledge regarding an incident given to the general public. Such information may include a synopsis of the incidents, emergency response and recovery actions, and the rationale for such actions and activities.

Public Alert and Notification System - The system for obtaining the attention of the public and providing appropriate emergency information. Sirens are the most commonly used outdoor public alert devices but frequently are supplemented by tone alert radios, visual warning devices for the hearing impaired, and telephone-based warning systems.

Public Affairs Officer (PAO) - The person on the Army Emergency Management Team who is in charge of public information affairs. The Public Information Officer is the counterpart to the on-post Public Affairs Officer.

Puget Sound Naval Shipyard (PSNS) / Naval Station Bremerton: A 353-acre shipyard performing repair, overhaul, testing and decommissioning of nuclear vessels in Sinclair Inlet adjacent to Bremerton, Washington. A nuclear aircraft carrier is homeported at Naval Station Bremerton that is co-located with the Shipyard. Emergency preparedness and response for all nuclear ships at the Shipyard and Naval Station Bremerton are the responsibility of the Shipyard Commander.

Recovery and Restoration - The late phase protective activities taken to address the long-term concerns in the affected area(s) and among its residents. These concerns include economic, social, psychological, physiological, and environmental impacts, as well as control of contaminated food, and a continuing public information effort.

Reentry - The intermediate phase protective action to allow the temporary controlled entrance into evacuated or relocation areas by emergency workers and members of the general public meeting specific criteria.

Regional Response Team (RRT) - The representatives of federal agencies and a representative from each state in the federal region. During a response to a major hazardous materials incident involving transportation or a fixed facility, the On-Scene Coordinator may request that the RRT be convened to provide advice or recommendations on specific issues requiring resolution.

Relocation - The intermediate phase protective action to move residents out of areas where continued full-time occupancy would cause radiation exposures in excess of federal guidelines.

Relocation Access Control Point (RACP) - An access control point established along the relocation boundary where access into the relocation area is maintained (synonymous with Relocation Control Point).

Relocation Area - The geographic area in which relocation has been determined to be necessary. This area is defined by geopolitical designations that surround an area of potential exposure with long-term health and safety impacts to the general public.

REM - The unit of exposure expressed as dose equivalent. (The dose in rem is equal to the absorbed dose times a quality factor. The quality factor takes into consideration the linear energy transfer of each type of radiation due to its size, charge, spin, or fluence.)

Return - The intermediate phase action to allow evacuees to return to their homes as quickly as possible in areas that were clearly not affected. Several return protective action decisions may be made, and are described as Initial Return, Second Return, and others.

Revised Code of Washington (RCW) - Laws enacted by the Washington State Legislature and approved by the Governor of Washington State.

Roentgen (R) - A unit of exposure to ionizing radiation. It is that amount of gamma or X-rays required to produce ions carrying one electrostatic unit of electrical charge in one cubic centimeter of dry air under standard conditions.

Risk Analysis - The development of a quantitative estimate of risk based on engineering evaluation and mathematical techniques for combining estimates of incident consequences and frequencies**.**

Routine Leaker – When an agent vapor is detected at an extremely low level inside of an igloo. These leakers must be found within the munitions engineering control (i.e., a shipping/fireing tube if the munitions is an M55 rocket) or within an approved chemical storage facility (i.e., igloo or structure) with chemical effects are expected to be confirmed to the chemical limited area.

Service Response Force (SRF) - A Department of Army level emergency response organization, commanded by a general officer, capable of performing and sustaining the chemical accident/incident response mission. The SRF is comprised of the Initial Response Force and follow-on forces consisting of a staff and specialized teams from various agencies and organizations involved in the response to, and recovery from, a chemical event.

Sheltering - A protective action that involves taking cover in a building that can be made relatively airtight. Generally, any building suitable for winter habitation will provide some protection when the windows and doors are closed and the heating, ventilation, and air conditioning systems are turned off. Effectiveness can be increased by methods such as using an interior room or basement, taping doors and windows, and employing other systems to limit natural ventilation.

Site-Specific Emergency Response Concept Plan - A concept plan developed for a specific chemical agent stockpile location by applying the concepts and methodologies of the Emergency Response Concept Plan. Each site-specific concept plan categorizes the chemical events that could occur at that location and examines the topographic, meteorological, and population characteristics of the area to develop proposed EPZ boundaries and identify appropriate protective actions.

Special Population - In the event of public evacuation, certain groups within the plume exposure pathway emergency planning zone may require special transportation or protective provisions due to special needs or sensitive industrial operations. Examples of such groups are the staff and inhabitants of: Schools and day care centers; nursing homes; hospitals; retirement centers; public utilities; large dairies; correctional institutions; facilities for developmentally disabled and physically challenged persons; special industrial plants.

State Emergency Response Commission (SERC) - The state planning group designated by the Superfund Amendments and Reauthorization Act of 1986, Title III statutes as the state coordinating body for hazardous materials activities.

Submarine Base Bangor: A 7450-acre nuclear Submarine Base on the eastside of Hood Canal near Bangor, Washington. Eight Trident submarines and one fast attack submarine are homeported at Submarine Base Bangor. Emergency preparedness and response for all nuclear submarines at Submarine Base Bangor are the responsibility of the Submarine Group NINE.

Surety Event: An accident or incident that involves chemical surety materials.

Superfund Amendments and Reauthorization Act of 1986 (SARA) - Title III of SARA includes detailed provisions for community emergency planning for fixed chemical facilities.

Technical Specifications - The limits, operating conditions, and other requirements imposed by the NRC on the operation of commercial facilities.

Thermoluminescent Dosimeter (TLD) - A device for measuring radiation exposure similar to a film badge or a pocket dosimeter.
Thyroid Blocking Agent - A prophylactic compound such as Potassium Iodide (KI) used to block the intake of radioactive iodine by the thyroid in a human being.

Title III - A major section of the Superfund Amendments and Reauthorization Act entitled the "Emergency Planning and Community Right-to-Know Act of 1986." A law that requires the establishment of state and local planning organizations (State Emergency Response Commissions and Local Emergency Planning Councils) to conduct emergency planning for hazardous materials incidents. It requires (1) site-specific planning for extremely hazardous substances, (2) participation in the planning process by facilities storing or using hazardous substances, and (3)

notifications to SERCs and LEPCs of releases of specified hazardous substances. It also provides for mechanisms to provide information on hazardous chemicals and emergency plans for hazardous chemical events to the public.

Unified Dose Assessment Center (UDAC) – An area within the U S DOE-RL Site EOC which houses the personnel responsible for the coordination of radiological monitoring teams, collection of radiological monitoring data, calculation of dose projections, and the recommendation of protective actions for the Emergency Planning Zones. Also see dose assessment center.

United States Department of Energy (USDOE) - The federal agency responsible for a variety of energy research, development, and materials production activities at the Hanford Site located in Benton County, Washington. Through its Richland Operations Office, resource support is provided for a fixed nuclear facility incident.

Vapor - Agent occurring as a gas. In particular, vapor particles of agent are less than two microns in diameter.

Vesicant Agent - A chemical agent that induces blistering externally or internally.

VX -

Description

This chemical agent has the consistency and appearance of motor oil. It is straw colored and odorless in its pure form. It has very low evaporation characteristics and is heavier than air as a suspended vapor. It is moderately soluble in water.

Effect

- Low dose effects include a redness and pressure in and behind eyes, sweating, and salivation.
- Higher dosages produce nasal congestion, tightness in the chest, salivation, nausea, vomiting, diarrhea, stomach cramps, involuntary urination/defecation, generalized muscle twitching and muscle cramps, depression, anxiety, and confusion.
- Exposure to high concentrations of nerve agent may bring on a lack of coordination, mental confusion and collapse so rapidly that the casualty cannot perform self-aid.
- Lethal dose: Concentrations of VX at 70 milligrams of agent per cubic meter of air can produce a lethal dose in a population of healthy males ages 18 to 25 years.

Warning - A notification to the public in advance of anticipated emergency.

Wedge - An angle centered about the downwind bearing. Used to indicate a larger area of concern for emergency planning than that provided by the output of a dispersion model. For example, the D2PC dispersion model assumes that the area surrounding the release is flat and open, and that there will be no changes in the wind direction after the release. For this reason, a wedge is often used to account for model limitations.

APPENDIX 1
DEFINITIONS and ACRONYMS

ACRONYMS

ACP	Access Control Point
ALARA	As Low as Reasonably Achievable
AEGL	Acute Exposure Guideline Level
AEL	Airborne exposure Limits
APA	Area of Planning Attention
ARCA	Area Requiring Corrective Action
BWR	Boiling Water Reactor
CAI	Chemical Accident/Incident
CAIRA	Chemical Accident/Incident Response and Assistance
CE	Community Emergency
CEMP	Comprehensive Emergency Management Plan
CEO	Chief Elected Official
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLA	Chemical Limited Area
CSM	Chemical Surety Materials
CSDP	Chemical Stockpile Disposal Program
CSEPP	Chemical Stockpile Emergency Preparedness Program
DAC	Dose Assessment Center
DCX	Direction and Control Exercise
DFO	Disaster Field Office
DHS	Department of Homeland Security
DILs	Derived Intervention Levels
DOD	Department of Defense
EAL	Emergency Action Level
EAS	Emergency Alert System
ECC	Emergency Control Center
EFSEC	Energy Facility Site Evaluation Council
EMD	Emergency Management Division
ENW	Energy Northwest
EOC	Emergency Operation Center
EOF	Emergency Operations Facility
EOP	Emergency Operations Plan
EPZ	Emergency Planning Zone
ERP	Emergency Response Procedure
ESF	Emergency Support Function
EWAC	Emergency Worker/Assistance Center
FACP	Food Access Control Point
FEMA	Federal Emergency Management Agency
FCO	Federal Coordinating Officer
FFO	First Federal Official

FNF	Fixed Nuclear Facility
FRC	Federal Response Center
FRMAC	Federal Radiological and Monitoring Assessment Center
FRERP	Federal Radiological Emergency Response Plan
FSX	Full-Scale Exercise
GE	General Emergency
HQDA	Headquarters, Department of the Army
ICCB	Intergovernmental Consultation and Coordination Boards
IRF	Initial Response Force
IRZ	Immediate Response Zone
JIC	Joint Information Center
JIS	Joint Information System
KI	Potassium Iodide
LAE	Limited Area Event
LOCA	Loss of Coolant Accident
MCE	Maximum Credible Event
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
MSZ	Marine Safety Zone
MUDAC	Meteorological Unified Dose Assessment Center
NCP	National Contingency Plan
NDA	National Defense Area
NNPP	Naval Nuclear Propulsion Program
NOUE	Notification of Unusual Event
NRC	Nuclear Regulatory Commission
NSE	Non-Surety Event
NUREG	Nuclear Regulatory Commission Guidance Document
OSC	On-Scene Coordinator
ORO	Offsite Response Organization
PAD	Protective Action Decision
PAG	Protective Action Guides
PAO	Public Affairs Officer
PAR	Protective Action Recommendations
PAZ	Protective Action Zone
PIO	Public Information Officer
POE	Post only Event
PSNS	Puget Sound Naval Shipyard
PZ	Precautionary Zone
R	Roentgen
RACP	Relocation Access Control Point
REP	Radiological Emergency Preparedness (Program of Plan)
RCW	Revised Code of Washington
REP	Radiological Emergency Preparedness
RRT	Regional Response Team
RRTF	Recovery and Restoration Task Force
SAE	Site Area Emergency

SARA	Superfund Amendments and Reauthorization Act
SERC	State Emergency Response Commission
SCO	State Coordination Officer
SRF	Service Response Force
SSL	Senior State Liaison
TCP	Traffic Control Point
TLD	Thermoluminescent Dosimeter
UDAC	Unified Dose Assessment Center
UMCD	Umatilla Chemical Depot
USDA	United States Department of Agriculture
USDOE	United States Department of Energy
USDOE-RL	United States Department of Energy-Richland
WEIC	Washington Emergency Information Center
WSDA	Washington State Department of Agriculture
WSDOT	Washington State Department of Transportation
WSP	Washington State Patrol